

EXHIBIT 145

PUBLIC

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION**

United States of America, *et al.*,

Plaintiffs,

v.

Google LLC,

Defendant.

Case No. 1:23-cv-00108-LMB-JFA

Hon. Leonie H. M. Brinkema

EXPERT REPORT OF ROSA M. ABRANTES-METZ, PH.D.

December 22, 2023

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120. AdX does not participate in header bidding.²⁰⁹ If publishers want to compare the price available from AdX to the prices available from header bidding, they need to implement a two-step process.²¹⁰ Step one is the header bidding process described above, where the highest bid from exchanges participating in header bidding is obtained.²¹¹ In step two, those bids are passed to DFP, and effectively act as a floor price for the AdX auction.²¹² If an AdX bidder can beat that floor price, AdX wins, and AdX's bidder serves the advertisement.²¹³ Because AdX continued to run a second-price auction that could use the winning bid from header bidding as the price floor, if only one AdX advertiser's bid exceeded the floor price, the winning bidder would only pay the price of the header bidding bid. If AdX cannot beat the highest header bidding price, the impression is served by the exchange (and their respective bidder) which offered the highest price in the header bidding auction.²¹⁴

121. Header bidding was widely adopted by publishers. Header bidding tools have been available to publishers since at least 2009, but according to Google, header bidding "adoption exploded in 2015."²¹⁵ An Iponweb presentation produced by Criteo reported

²⁰⁹ KVL00000945, at -946 (April 24, 2019); and MSFT-LIT-0000065419, at -441 (February 1, 2021) ("[T]he success of header bidding has been undermined by Google's refusal to interoperate with it.").

²¹⁰ KVL00000945, at -946 (April 24, 2019); GOOG-DOJ-13235212, at -216 (October 2019); and ATT-GCID-00111923, at -941 (Undated).

²¹¹ GOOG-DOJ-13235212, at -216 (October 2019); and ATT-GCID-00111923, at -941 (Undated).

²¹² GOOG-DOJ-13235212, at -216 (October 2019); GOOG-AT-MDL-008842393, at -398 (August 4, 2023) (Korula Declaration); and ATT-GCID-00111923, at -941 (Undated).

²¹³ GOOG-DOJ-13235212, at -216 (October 2019); and ATT-GCID-00111923, at -941 (Undated).

²¹⁴ GOOG-DOJ-13235212, at -216 (October 2019); and ATT-GCID-00111923, at -941 (Undated).

²¹⁵ FBDOJ012330088, at -094 (Undated); and GOOG-DOJ-13235212, at -221 (October 2019) ("Adoption exploded in 2015 with press coverage").

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that as of 2016, “70% of publishers ha[d] adopted header bidding.”²¹⁶ In 2019, “eMarketer estimate[d] that nearly 80% of the top sites in the US have adopted header bidding solutions.”²¹⁷

F. Google Introduces Open Bidding

122. In response to publishers’ use of header bidding, Google introduced Open Bidding (also known as Exchange Bidding) to its DFP product in 2018.²¹⁸ Open Bidding allowed some third-party ad exchanges to compete against AdX simultaneously within DFP.²¹⁹ In Open Bidding, the price from AdX is compared to the price available from other exchanges simultaneously, and the exchange with the highest price wins the opportunity to serve its bidder’s ad. Open Bidding is similar to header bidding in some respects but is administered by Google within DFP.²²⁰
123. Google charges publishers a fee when an exchange other than AdX wins their impressions via Open Bidding.²²¹ According to Google, “when an auction was won by

²¹⁶ CRITEO GOOGLELIT_0000015340, at -367 (April 2016) (“Nearly 70% of publishers have adopted header bidding; 80% of those are seeing revenue gains”).

²¹⁷ GOOG-DOJ-AT-00034301, at -304 (June 2020) (“eMarketer estimates that nearly 80% of the top sites in the US have adopted header bidding solutions.”); and FBDOJ012293698, at -725 (Undated).

²¹⁸ GOOG-AT-MDL-006217592, at -606 (December 12, 2022); GOOG-AT-MDL-008842393, at -400 and -401 (August 4, 2023) (Korula Declaration); Open Bidding was “launched in alpha” by Google in 2016 but did not become “generally available” until April 2018. GOOG-AT-MDL-008842393, at -401 (August 4, 2023) (Korula Declaration); Open Bidding was previously called Exchange Bidding. GOOG-DOJ-13235212, at -212 (October 2019).

²¹⁹ GOOG-DOJ-04429792, at -795 and -808 (April 2017).

²²⁰ GOOG-TEX-00124296, at -325 (August 29, 2016); GOOG-AT-MDL-006217592, at -606 (December 12, 2022); and GOOG-AT-MDL-008842393, at -400 (August 4, 2023) (Korula Declaration).

²²¹ GOOG-AT-MDL-008842393, at -401 (August 4, 2023) (Korula Declaration); and GOOG-TEX-00103579, at -579 (July 12, 2016).

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AdX, which had exclusive access to GDN [Google Ads] demand.”⁴⁷⁵

314. Google also understood that AdX would lose transactions without the Google Ads exclusivity:

- Removing the Google Ads exclusivity would “have implications for our [AdX] publisher base.”⁴⁷⁶
- In a 2011 email chain Google forecasted that if GDN (Google Ads) were allowed to access inventory on third-party ad exchanges, Google Ads’ revenues would increase somewhat, but AdX and AdSense would lose clients. Moreover, DFP would lose 20% of its projected impressions, and AdX would lose 30% and 50% of its projected impressions in 2011 and 2012, respectively.⁴⁷⁷
- The same 2011 presentation observed that “[t]he enablement of AdWords on 3rd party inventory sources will incentivize clients to move from AdX and AdSense to Rubicon, Pubmatic, and AdMeld.” The same presentation also noted that a consequence of Google Ads’ bidding on third-party exchanges would be that “[p]ublishers move away from AdSense/AdX to 3rd party exchanges (driven by CPM shifts and perception that sell-side not relevant).” It goes on to assert that “[l]oss of UVP [Unique Value Proposition], Competition for inventory becomes

⁴⁷⁵ GOOG-DOJ-04387378, at -401 (2018, Google slide deck titled, “Header Bidding Observatory #3 Q1 2018”: “Back when AdX launched, we imagined publishers would select one exchange partner to manage all programmatic demand. Managing multiple ad networks with different static price points had proven to be such a headache for pubs it didn’t seem logical that they would want to go down the same road with exchanges, especially since all exchanges had access to essentially the same demand. That was except for AdX, which had exclusive access to GDN demand. Exclusive access to the largest ad network in the world and the fact we had our proprietary contextual targeting algorithm, we assumed that AdX would be the preferred exchange for pubs. However, it quickly became apparent pubs were willing to work with multiple exchanges.”).

⁴⁷⁶ GOOG-DOJ-03872448, at -448 (Undated, Google document titled, “Adwords cross-exchange bidding”: “GDN needs to be cross-exchange competitively . . . However, that has implications for the publisher base. Currently AdSense and AdX use AdWords demand as a unique sales proposition”).

⁴⁷⁷ GOOG-DOJ-07807539, at -539 (Google email starting on April 19, 2011 indicating that Google would lose 20-30% of its AdX publishers and 20% of DFP’s publishers if it allowed Google Ads bids on other exchanges.

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purely feature driven.” Even though cross-exchange bidding by Google Ads could attract advertisers to “move” to AdWords, Google predicted “[p]ublisher inventory shifts are potentially more dramatic than expected gain in advertiser spend.”⁴⁷⁸

- Also in 2011, an email from Scott Spencer, Google’s director of product management, wrote to another Google executive to report that Google Ads’ bidding on four third-party exchanges would boost GDN’s revenue by 5%, but lower the expected transaction prices for AdX and AdSense publishers by 10% while boosting the expected transaction prices of the third-party exchanges by 16%, which “could cause some publishers to shift where they offer their inventory.”⁴⁷⁹
- A 2014 Google experiment estimated that Google would lose 70% of its revenue if Google Ads did not bid on AdX inventory. Publisher yield would drop 65%.⁴⁸⁰
- In 2016, Google determined that allowing Google Ads to bid without restrictions across all exchanges would “fully compromise[] AdX’s competitive advantage wrt [with respect to] its exclusivity to GDN [Google Ads] demand.”⁴⁸¹
- A 2016 email by Google executive Bryan Rowley to fellow Google executives observed that cross-exchange bidding by Google Ads presented “[r]isk to AWBid that [sic] sell side revenues decline or miss growth targets if GDN buying is not incremental to AdX/AFC/AdMob spend . . . Cannibalization from AWBid buying could accelerate publishers shifting inventory or assigning priority to competitive

⁴⁷⁸ GOOG-DOJ-14826585, at -586 and -592 (Undated, Google slide deck, titled “Implications of AdWords’s and AdX’s Bidders”: “The enablement of AdWords on 3rd party inventory sources will incentivize clients to move from AdX and AdSense to Rubicon, Pubmatic, and AdMeld.”).

⁴⁷⁹ GOOG-DOJ-04293455, at -455 (Internal Google email from Scott Spencer to Neal Mohan (starting on February 13, 2011) regarding “Initial DRAFT S-D Impact Analysis for multi-exchanges”).

⁴⁸⁰ GOOG-DOJ-15140608, at -608 (January 2014, Google memo titled, “Impact of GDN not participating in AdX auctions”).

⁴⁸¹ GOOG-DOJ-27766486, at -491 (Google email starting on April 7, 2016 regarding “AWBid review next week.”: “If we go with all-demand AWBid, that fully compromises AdX’s competitive advantage w.r.t its exclusivity to GDN demand.”).

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SSPs/Exchanges.”⁴⁸²

- Finally, a November 16, 2015, document outlining a project to develop an “unbiased view of the potential impacts for Google on GDN [Google Ads] buying cross-exchange” noted that “by allowing GDN [Google Ads] to buy cross-exchange the spend on the sell-side products could be directly reduced thereby slowing the growth of the sell-side business ... When our competition is able to say they have access to GDN, whether it is equal or not, our sales and marketing teams will have to be prepared for significant competitive pressure. Our by-side positioning will put sell-side relationships at risk.”⁴⁸³

315. Google was worried about how it would compete in the Ad Exchange market if it were to relax its exclusivity with Google Ads. In a 2011 email, Google’s Craig DiNatali asked colleagues, “Do we plan on additional differentiation points for AdX sell side facing [sic] solutions that will help us compete when our leverage of ‘Largest Demand Source’ is not relevant given our allowing AdWords to compete on any other supply source?”⁴⁸⁴ Google’s “Making AdX Awesome” working group had not identified other competitive advantages for AdX to replace the exclusive access to Google Ads demand.⁴⁸⁵

316. Another Google document from 2011 identified the risk that publishers would abandon

⁴⁸² GOOG-DOJ-10948271, at -271 (Google email from Google executive Bryan Rowley starting on January 6, 2016 regarding “AWBid Story Feedback”). *See also* GOOG-DOJ-14432746, at -748 (December 2015 Google slide deck titled, “GDN Cross Exchange”).

⁴⁸³ GOOG-DOJ-11765613, at -614 (Undated, Google document with subject, “GDN Cross Exchange Model: GSL POV”).

⁴⁸⁴ GOOG-DOJ-05244839, at -839 (Internal email from Sean Downey to other Google Staff starting on February 14, 2011 regarding “AdWords Cross Exchange Buying Update”).

⁴⁸⁵ GOOG-DOJ-27766486, at -491 (Google internal email correspondence starting on April 7, 2016 regarding “AWBid review next week”).